

Method and system for managing a distributed trust path locator for public key certificates relating to the trust path of an X.509 attribute certificate

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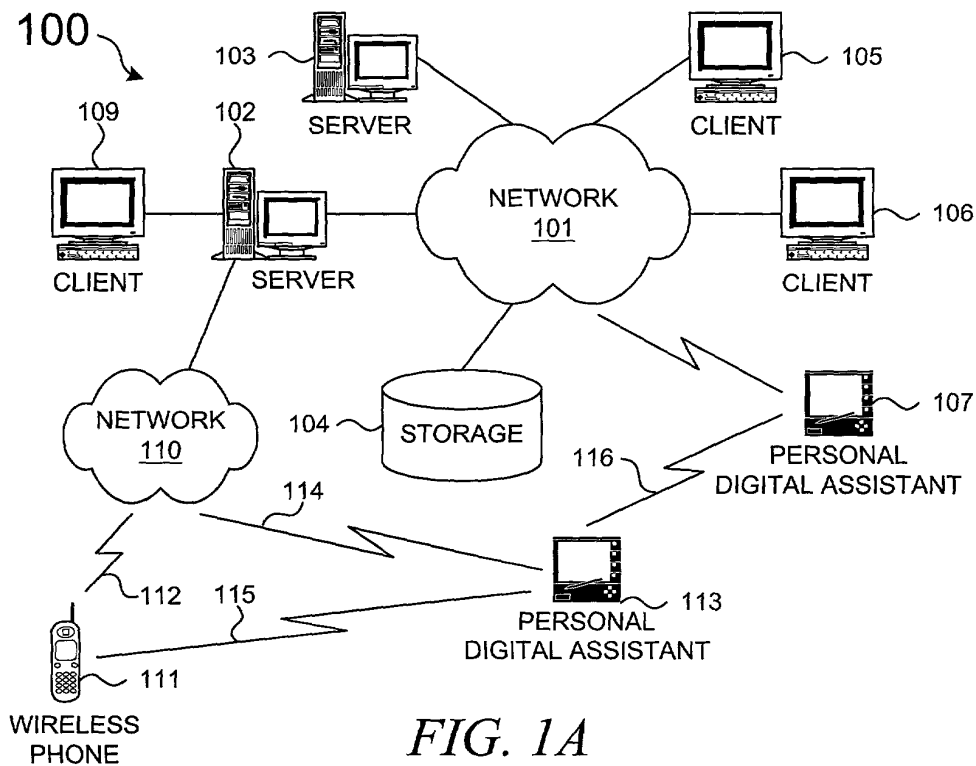


FIG. 1A  
(PRIOR ART)

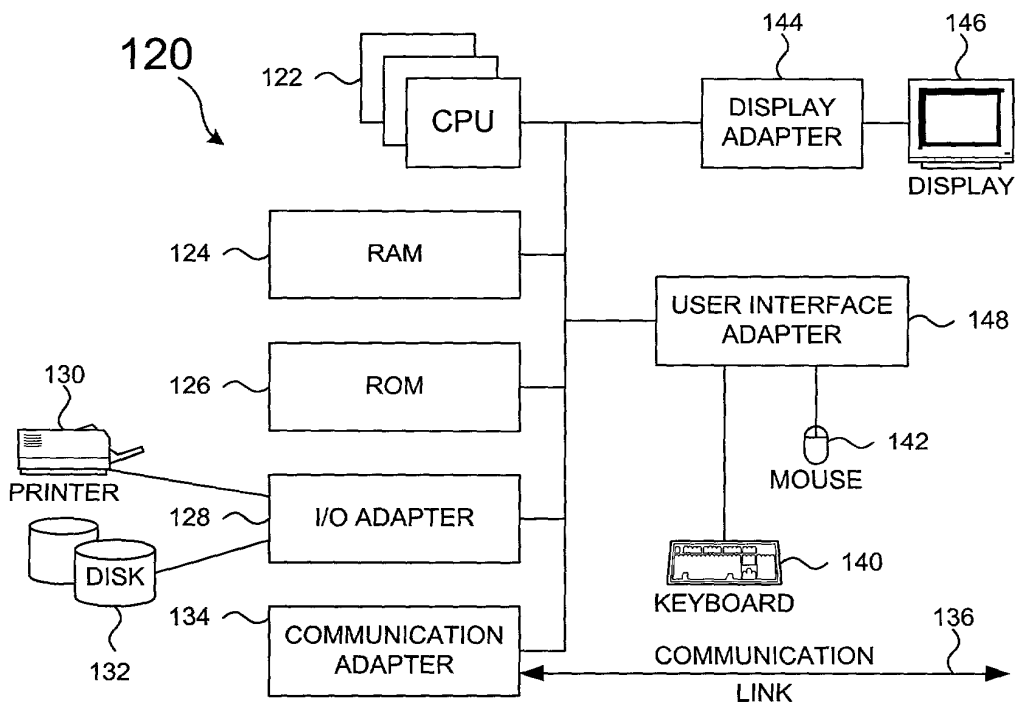


FIG. 1B  
(PRIOR ART)

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relating to the trust path of an X.509 attribute certificate

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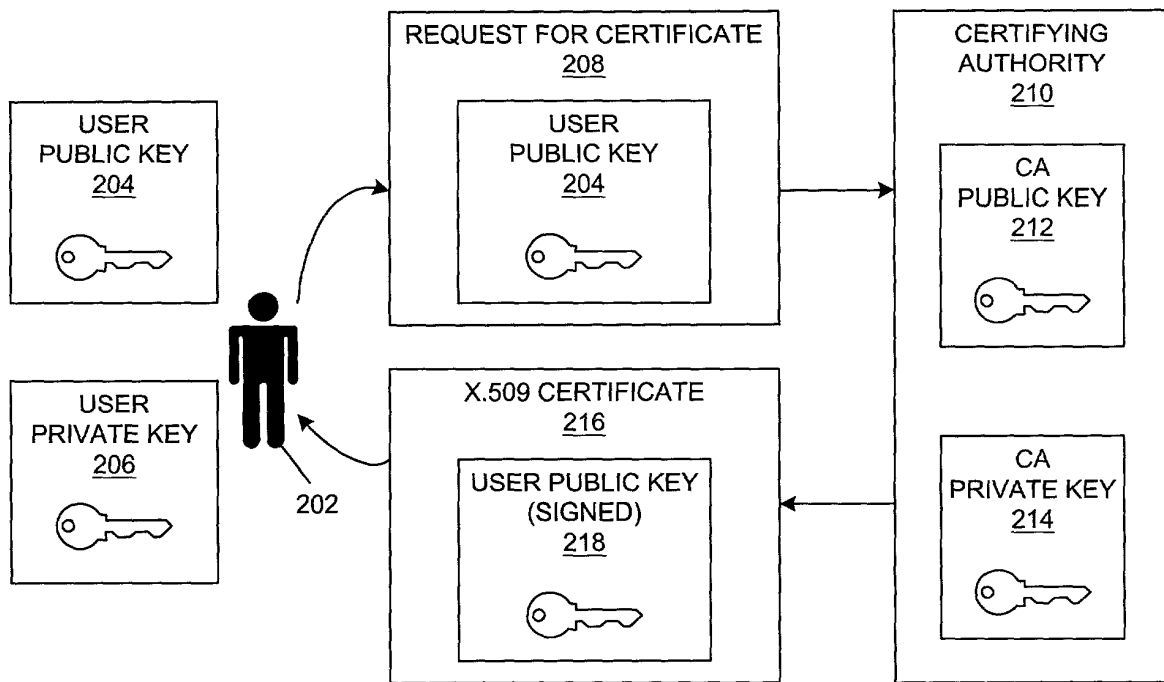


FIG. 2  
(PRIOR ART)

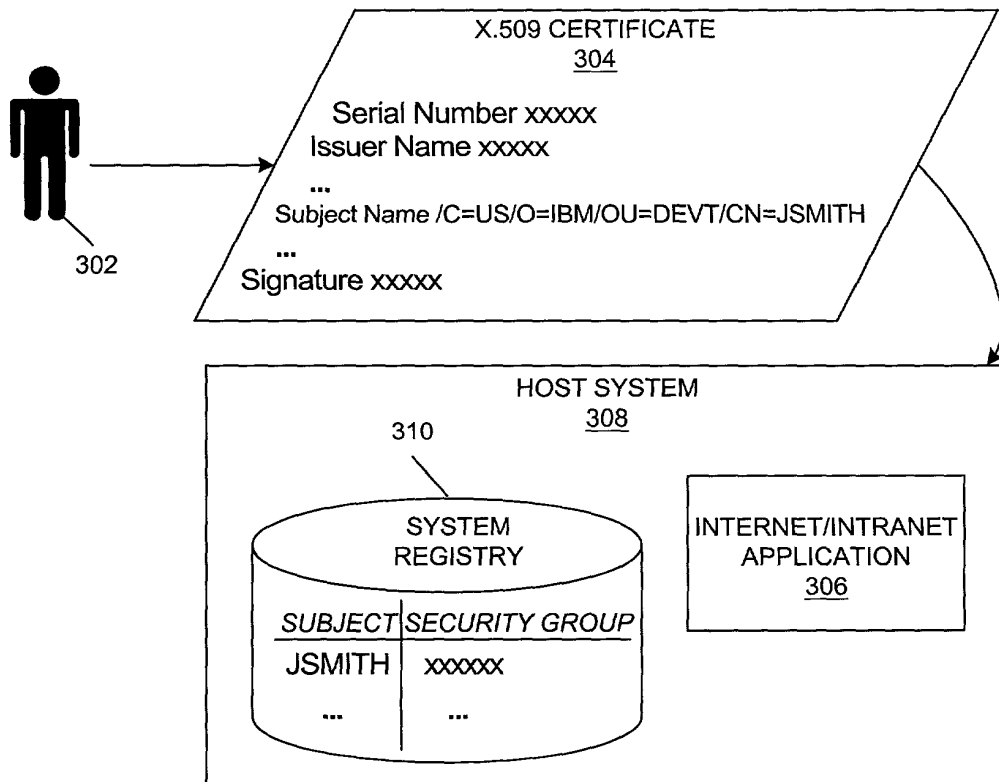
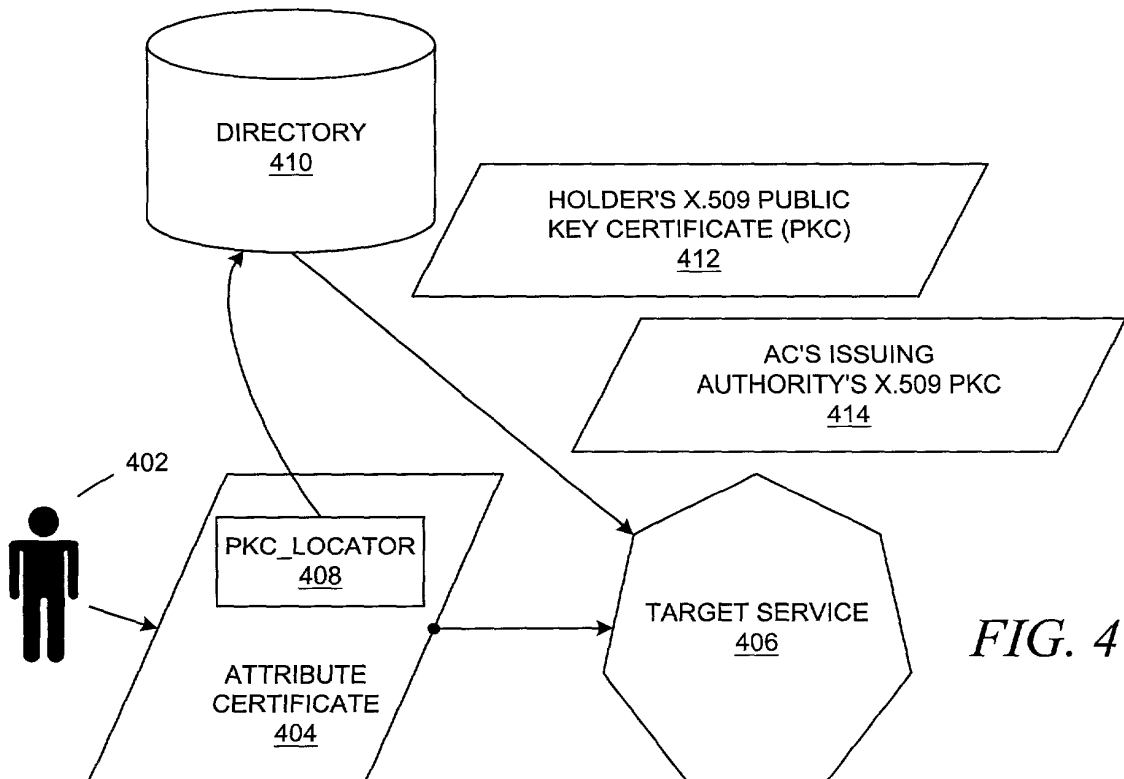
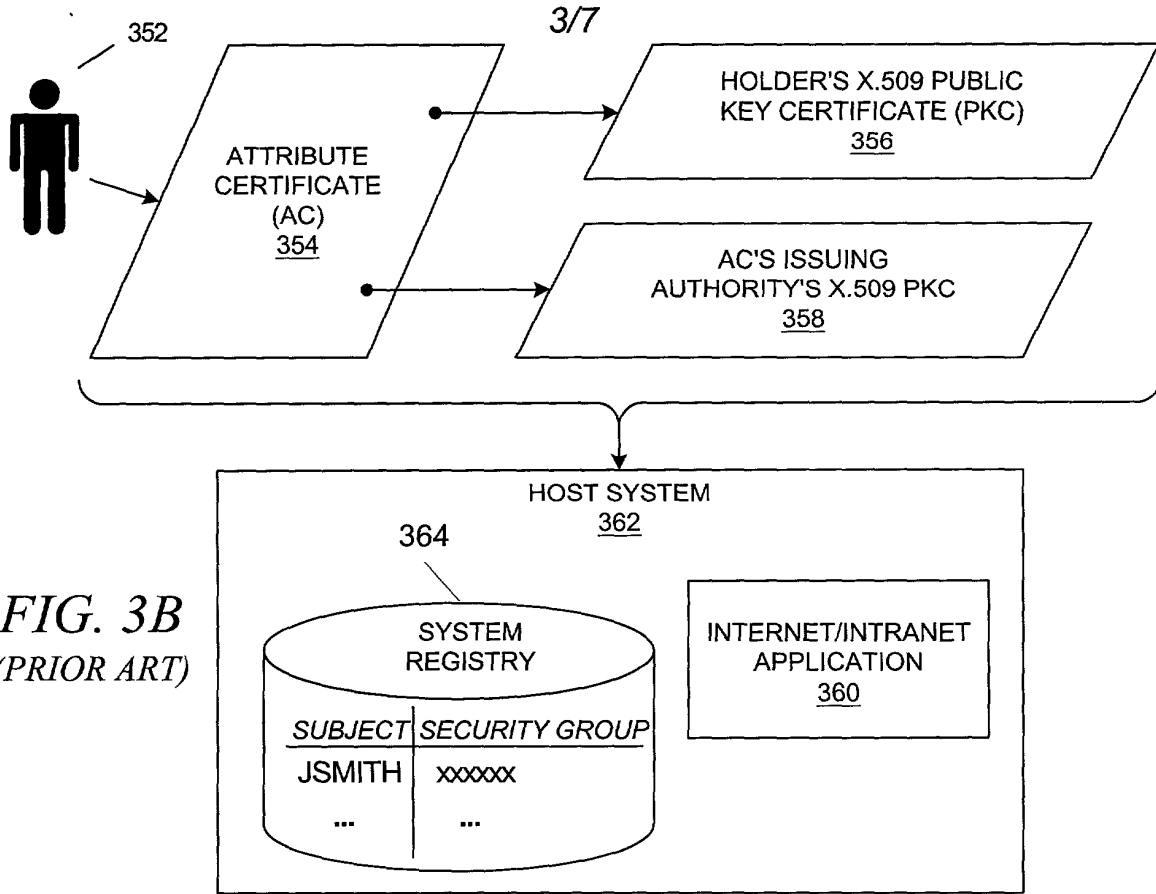


FIG. 3A  
(PRIOR ART)

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Certificate ::= SEQUENCE {  
     tbsCertificate            TBSCertificate,  
     signatureAlgorithm       AlgorithmIdentifier,  
     signature                 BIT STRING }

TBSCertificate ::= SEQUENCE {  
     version                   [0] Version DEFAULT v1,  
     serialNumber              CertificateSerialNumber,  
     signature                 AlgorithmIdentifier,  
     issuer                    Name,  
     validity                  Validity,  
     subject                   Name,  
     subjectPublicKeyInfo      SubjectPublicKeyInfo,  
     issuerUniqueID            [1] IMPLICIT UniqueIdentifier OPTIONAL,  
     subjectUniqueID           [2] IMPLICIT UniqueIdentifier OPTIONAL,  
     extensions                [3] Extensions OPTIONAL }

Version ::= INTEGER { v1(0), v2(1), v3(2) }

CertificateSerialNumber ::= INTEGER

Validity ::= SEQUENCE {  
     notBefore                 Time,  
     notAfter                  Time }

Time ::= CHOICE {  
     utcTime                   UTCTime,  
     generalTime               GeneralizedTime }

UniqueIdentifier ::= BIT STRING

SubjectPublicKeyInfo ::= SEQUENCE {  
     algorithm                 AlgorithmIdentifier,  
     subjectPublicKey          BIT STRING }

Extensions ::= SEQUENCE SIZE (1..MAX) OF Extension

Extension ::= SEQUENCE {  
     extnID                    OBJECT IDENTIFIER,  
     critical                  BOOLEAN DEFAULT FALSE,  
     extnValue                 OCTET STRING }

*FIG. 5A*  
(PRIOR ART)

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**Method and system for managing a distributed trust path locator for public key certificates  
relating to the trust path of an X.509 attribute certificate**

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```

AttributeCertificate ::= SEQUENCE {
    acinfo          AttributeCertificateInfo,
    signatureAlgorithm AlgorithmIdentifier,
    signatureValue   BIT STRING
}

AttributeCertificateInfo ::= SEQUENCE {
    version          AttCertVersion DEFAULT v1,
    holder           Holder,
    issuer           AttCertIssuer,
    signature        AlgorithmIdentifier,
    serialNumber     CertificateSerialNumber,
    attrCertValidityPeriod AttCertValidityPeriod,
    attributes       SEQUENCE OF Attribute,
    issuerUniqueID   UniqueIdentifier OPTIONAL,
    extensions       Extensions OPTIONAL
}

AttCertVersion ::= INTEGER { v1(0), v2(1) }

Holder ::= SEQUENCE {
    baseCertificateID [0] IssuerSerial OPTIONAL,
    -- the issuer and serial number of
    -- the holder's Public Key Certificate
    entityName        [1] GeneralNames OPTIONAL,
    -- the name of the claimant or role
    objectDigestInfo  [2] ObjectDigestInfo OPTIONAL
    -- if present, version must be v2
}

ObjectDigestInfo ::= SEQUENCE {
    digestedObjectType ENUMERATED {
        publicKey          (0),
        publicKeyCert      (1),
        otherObjectTypes   (2) },
    -- otherObjectTypes MUST NOT
    -- be used in this profile
    otherObjectTypeID     OBJECT IDENTIFIER OPTIONAL,
    digestAlgorithm       AlgorithmIdentifier,
    objectDigest          BIT STRING
}

```

**FIG. 5B**  
(PRIOR ART)

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**Method and system for managing a distributed trust path locator for public key certificates  
relating to the trust path of an X.509 attribute certificate**

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```

AttCertIssuer ::= CHOICE {
    v1Form  GeneralNames, -- v1 or v2
    v2Form  [0] V2Form    -- v2 only
}

V2Form ::= SEQUENCE {
    issuerName      GeneralNames OPTIONAL,
    baseCertificateID [0] IssuerSerial OPTIONAL,
    objectDigestInfo [1] ObjectDigestInfo OPTIONAL
    -- at least one of issuerName, baseCertificateID
    -- or objectDigestInfo MUST be present}

IssuerSerial ::= SEQUENCE {
    issuer      GeneralNames,
    serial      CertificateSerialNumber,
    issuerUID   UniqueIdentifier OPTIONAL
}

AttCertValidityPeriod ::= SEQUENCE {
    notBeforeTime GeneralizedTime,
    notAfterTime  GeneralizedTime
}

Attribute ::= SEQUENCE {
    type      AttributeType,
    values    SET OF AttributeValue
    -- at least one value is required
}

AttributeType ::= OBJECT IDENTIFIER

AttributeValue ::= ANY DEFINED BY AttributeType

```

**FIG. 5C**  
(PRIOR ART)

```

PKClocator ::= SEQUENCE {
    holderPKClocator [0] GeneralNames OPTIONAL,
    authorityPKClocator [1] GeneralNames OPTIONAL
}

wherein GeneralNames is defined by IETF RFC2459 as

GeneralNames ::= SEQUENCE SIZE (1..MAX) OF GeneralName

GeneralName ::= CHOICE {
    otherName          [0] OtherName;
    rfc822Name         [1] IA5String,
    dNSName            [2] IA5String,
    x400Address        [3] ORAddress,
    directoryName      [4] Name,
    ediPartyName       [5] EDIPartyName,
    uniformResourceIdentifier [6] IA5String,
    iPAAddress         [7] OCTET STRING,
    registeredID       [8] OBJECT IDENTIFIER
}

```

**FIG. 6**

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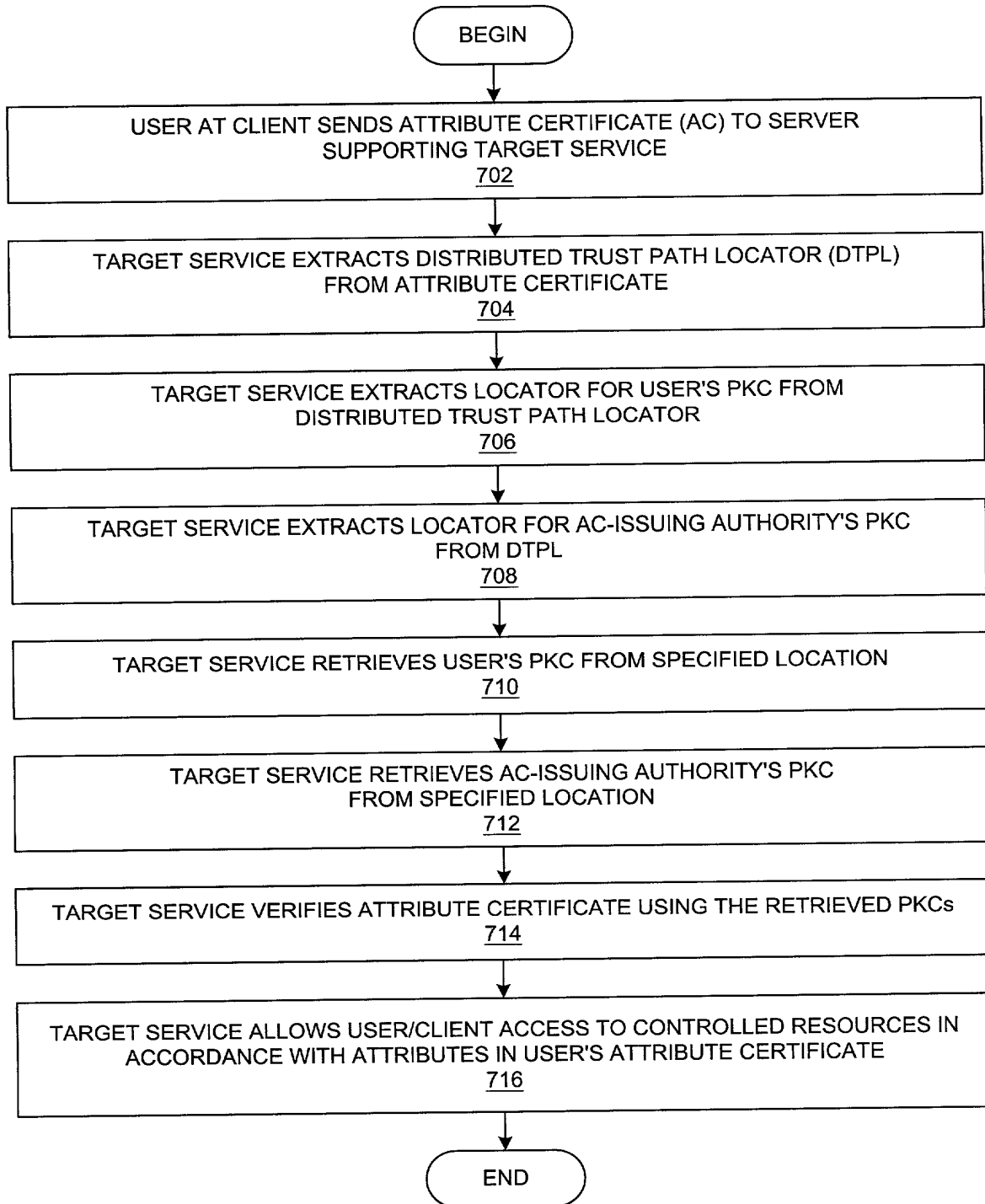


FIG. 7